

IN THE CLAIMS

Please amend the claims as follows:

1. (Withdrawn) A method for analyzing the interaction between one or more molecular species, said method comprising the steps of

creating streams of digital data, that are divisible into diotes, which represent units of digital molecular information;

transferring the stream of digital data through a substrate which is divided into units of biotes, wherein each biote represents the analog complement to a given diote and pairs with the given diote, and wherein each biote-diote pair contains structural molecular information to specifically identify a given molecular species;

manipulating the molecular structure of the substrate by adding or subtracting molecules or groups of molecules to be examined to or from the substrate;

receiving the streams of digital data transferred through the substrate; and

decoding the identity of an examined molecule or group of molecules interacting with the substrate by deciphering how the molecules affinity to another molecule or group of molecules or molecular sensor or group of molecular sensors alters the stream of digital data.

2. (Previously Presented) A method for identifying molecular species, said method comprising the steps of

creating at least one stream of binary data carried by electrical, molecular or light signals, transferring the at least one stream of binary data carried by electrical, molecular or light signals through a substrate;

allowing interaction of molecules or groups of molecules with the substrate;

receiving the streams of binary data carried by electrical, molecular or light signals transferred through the substrate; and

decoding the identity of an examined molecule or group of molecules interacting with the substrate according to the alteration of the stream of binary data carried by electrical, molecular or light signals obtained during the transmission of the at least one stream of binary data carried by electrical, molecular or light signals through the substrate.

3. (Previously Presented) The method according to claim 2, wherein the stream of binary data carried by electrical, molecular or light signals is altered during its transfer through the substrate according to a mathematical or programmable function.
4. (Previously Presented) The method according to claim 2, wherein the step of creating includes generating a digitally encoded photon flux.
5. (Original) The method according to claim 4, wherein the photon flux includes a beam or group of beams consisting of polarized, non-polar, monochromatic or broad banded light.
6. (Previously Presented) The method according to claim 2, wherein the step of creating includes generating an array of molecules that can operate in a binary manner.
7. (Previously Presented) The method according to claim 2, wherein the step of creating includes generating digital electronic signals by gating electron flow over a two or a three dimensional space.
8. (Previously Presented) The method according to claim 2, wherein the step of manipulating includes adding or subtracting molecules or groups of molecules.
9. (Previously Presented) The method according to claim 8, wherein the manipulating includes use of heat, light, gravity, centripetal action, and/or pressure.
10. (Previously Presented) The method according to claim 8, wherein the manipulating is performed on either a two-dimensional surface or a three-dimensional element.
11. (Withdrawn) A device for analyzing the interaction between one or more molecular species, said device comprising
creating means that release streams of digital data being divisible into units of diotes, which represent units of digital molecular information;

transferring means that transfer the stream of digital data through a substrate which is divided into units of biotes wherein each biote represents the analog complement to a given diote and pairs with a given diote, and wherein each biote-diote pair contains structural molecular information to specifically identify a given molecular species;

manipulating means for manipulating the molecular structure of the substrate by adding or subtracting molecules or groups of molecules to be examined to or from the substrate;

receiving means for receiving the streams of digital data transferred through the substrate; and

decoding means for decoding the identify of an examined molecule or group of molecules interacting with the substrate by deciphering how the molecules affinity to another molecule or group of molecules or molecular sensor or group of molecular sensors alters the stream of digital data.

12. (Previously Presented) A device for identifying molecular species, said device comprising

creating means that release at least one stream of binary data carried by electrical, molecular or light signals,

transferring means that transfer the at least one stream of binary data carried by binary electrical, molecular or light signals through a substrate;

manipulating means for manipulating the molecular structure of the substrate by adding or subtracting molecules or groups of molecules to be examined to or from the substrate;

receiving means for receiving the at least one stream of binary data carried by electrical, molecular or light signals transferred through the substrate; and

decoding means for decoding the identity of an examined molecule or group of molecules interacting with the substrate according to the alternation of the at least one stream of binary data carried by electrical, molecular or light signals obtainable during the transmission of the at least one stream of binary data carried by electrical, molecular or light signals through the substrate.

13. (Previously Presented) The device according to claim 12, wherein the creating means include an optical system that generates a digitally encoded photon flux.

14. (Original) The device according to claim 13, wherein the photon flux includes a beam or group of beams consisting of polarized, non-polar, monochromatic or broad banded light.
15. (Previously Presented) The device according to claim 13, wherein the creating means include a microelectronic system that generates an array of molecules that can operate in a binary manner.
16. (Previously Presented) The device according to claim 13, wherein the creating means include a microelectronic component that generates digital electronic signals by gating electron flow over a three dimensional space.
17. (Original) The device according to claim 16, wherein the microelectronic component includes an entity that either stores, processes, transfers or creates electron flow.
18. (Previously Presented) The device according to claim 12, wherein the manipulating means includes an element that adds or subtracts a molecular entity.
19. (Previously Presented) The device according to claim 12, wherein the manipulating includes use of heat, light, gravity, centripetal action, and/or pressure.
20. (Previously Presented) The device according to claim 12, wherein the manipulating is performed on either a two-dimensional surface or a three-dimensional element.
21. (Withdrawn) Substrate for analyzing and for identifying molecular species comprising a first layer comprising biotes and a second layer comprising diotes, wherein the biotic layer represents the analog complement to said second diotic layer.
22. (Withdrawn) Substrate according to claim 21, wherein the biotic layer comprises receptors for the molecule species.

23. (Withdrawn) Substrate according to claim 21 or 22, wherein the diote comprises a series of information stages, i.e. a SPX, an ORG, a XEL and a MOL.
24. (Currently Amended) The method of claim 2, wherein decoding the identity of an examined molecule or group of molecules interacting with the substrate ~~include~~ includes detecting an alteration in the stream of binary data resulting from a change ~~in binary data~~ on the substrate correlated with a surface bound receptor.
25. (Currently Amended) The device of claim 12, wherein the decoding means for decoding the identity of an examined molecule or group of molecules interacting with the substrate includes means for detecting an alteration in the at least one stream of binary resulting from a change ~~in binary data~~ on the substrate correlated with a surface bound receptor.